

AD-A103 043

NAVY PERSONNEL RESEARCH AND DEVELOPMENT CENTER SAN D--ETC F/6 5/1  
LIFE CYCLE NAVY ENLISTED BILLET COSTS--FY1981.(U)

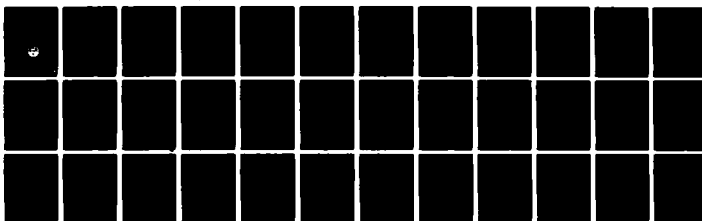
JUL 81 E A KOEHLER; R F TURNER

NPRDC-SR-81-22

UNCLASSIFIED

NL

1 of 1  
AD  
A-103 043



END

DATE

FILED

9 81

DTIC

AD 1110043

DMC FILE COPY

NPRDC SR 81-22

LEVEL III

JULY 1981

LIFE CYCLE NAVY ENLISTED BILLET  
COSTS--FY1981



NAVY PERSONNEL RESEARCH  
AND  
DEVELOPMENT CENTER  
San Diego, California 92152



81 8 17 041

12

NPRDC Special Report 81-22

July 1981

**LIFE CYCLE NAVY ENLISTED BILLET COSTS--FY1981**

Ernest A. Koehler  
Robert F. Turney

Released by  
James F. Kelly, Jr.  
Commanding Officer

Navy Personnel Research and Development Center  
San Diego, California 92152

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER NPRDC SR81-22	2. GOVT ACCESSION NO. 10-1203043	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) LIFE CYCLE NAVY ENLISTED BILLET COSTS--FY1981		5. TYPE OF REPORT & PERIOD COVERED
		6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) Ernest A. Koehler Robert F. Turney		8. CONTRACT OR GRANT NUMBER(s)
9. PERFORMING ORGANIZATION NAME AND ADDRESS Navy Personnel Research and Development Center San Diego, California 92152		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS 63707N Z1170 PN.05
11. CONTROLLING OFFICE NAME AND ADDRESS Navy Personnel Research and Development Center San Diego, California 92152		12. REPORT DATE July 1981
		13. NUMBER OF PAGES 42
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		15. SECURITY CLASS. (of this report)  UNCLASSIFIED
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report)  Approved for public release; distribution unlimited.		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) Billet costs Enlisted costs Personnel costs Life cycle costs  Cost model		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) The Enlisted Billet Cost Model has been developed to compute the cost of manning Navy billets with personnel having requisite ratings and pay grades, in terms of investment and operating cost to the U.S. government, for each year in the life cycle of a given billet. The resulting cost data are displayed for each active Navy rating by pay grade (E-2 through E-9) and reflect the total cost of manning an established or proposed operational billet.		

DD FORM 1 JAN 73 1473

EDITION OF 1 NOV 65 IS OBSOLETE

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

## FOREWORD

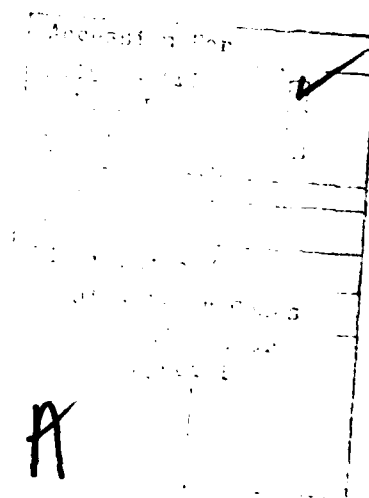
This effort was conducted in support of Navy Decision Coordinating Paper Z1170-PN, subproject Z1170-PN.05 (Reducing Manpower Costs Through Better System Design) and was sponsored by the Deputy Chief of Naval Operations (Manpower, Personnel and Training) (OP-01). The objective of the subproject is to develop techniques for analyses of hardware/software/personnel trade-offs at all stages of system design. Such techniques are needed to enable hardware developers to (1) select those characteristics of design that will maintain or increase manpower effectiveness, (2) reduce demands for critical ratings and pay grades, and (3) reduce the life cycle costs of manning the resulting hardware systems. The objective of this report is to provide decision makers in manpower planning and in hardware development offices with manpower annual and life cycle billet cost data. These data are intended for use in conducting acquisition and life cycle cost estimation studies for new hardware system concepts and alternative manpower support plans.

This report supersedes NPRDC Special Report 80-7, which presented Navy enlisted billet costs based on FY80 data. The life cycle billet cost data contained herein (Appendix B) were prepared under contract by B-K Dynamics, Inc., of Rockville, Maryland.

Appreciation is expressed to CDR Lee S. Maris and CDR Paul E. Kanive of the Cost and Economic Analysis Section, Chief of Naval Operations (OP-162), for their assistance as advisors to this effort.

JAMES F. KELLY, JR.  
Commanding Officer

JAMES J. REGAN  
Technical Director



## CONTENTS

	Page
INTRODUCTION . . . . .	1
Problem . . . . .	1
Background . . . . .	1
Objective . . . . .	1
USER INSTRUCTIONS . . . . .	2
Data Source . . . . .	2
Index Use . . . . .	2
Cost Computation . . . . .	2
Discount Rate Computation . . . . .	4
DISCUSSION . . . . .	6
RECOMMENDATIONS . . . . .	6
REFERENCES . . . . .	7
APPENDIX A--INDICES BY RATING TITLE AND BY RATING ABBREVIATION . . . . .	A-0
APPENDIX B--LIFE CYCLE NAVY ENLISTED BILLET COSTS BY RATING AND PAY GRADE . . . . .	B-0
DISTRIBUTION LIST	

## INTRODUCTION

### Problem

Personnel costs currently constitute the major percentages of the actual costs of Navy operational systems. Salaries and related costs for personnel constitute about 61 percent of the total DoD yearly budget (King, 1977). A cost analysis of the DD 963 class destroyer showed that manning costs comprised 58 percent of the expected 20-year operational support costs (DDR&E, 1973).

If Navy hardware program managers and systems engineers are to make informed decisions on cost-effective design alternatives, they must have information on the life cycle costs of specific operator and maintenance personnel required by such design alternatives. The development of such cost information is a major objective of subproject Z1170-PN.05, Reducing Manpower Costs, under which this work was conducted.

### Background

The life cycle billet cost is the estimated average total cost over a fixed number of years of manning a position with a given rating and a given pay grade. This cost includes the following:

1. Direct costs, including base pay, allowances, hazard pay, proficiency pay, and medical costs.
2. Training and retirement costs, which are amortized over the number of years personnel are expected to remain in service (based on historical continuation rates). These costs include liability annuities and reenlistment bonuses that are applicable for certain ratings.
3. Overhead (fixed) costs, which are associated with all personnel regardless of rating and pay grade (e.g., those incurred for maintaining medical and training facilities).

It does not include costs relating to nonmilitary personal skill development (college courses), officers, or external military tasks (e.g., compartment cleaning, mess duties, and other special details).

This publication supersedes NPRDC Special Report 80-7 (Koehler, 1980), which presented life cycle Navy enlisted billet costs based on FY80 data.

### Objective

The objective of this development effort is to provide program managers and systems engineers with the latest available data (based on FY81 military pay rates) on the life cycle costs of Navy enlisted personnel by ratings and pay grades for 1-, 5-, 10-, 15-, and 20-year periods. The figures in the multiple-year (5, 10, 15, and 20) computations are based on the current discount rate of 10 percent. This information will enable manpower and hardware managers and engineers to predict the life cycle costs of operator and maintenance personnel, and permit them to make decisions by (1) weighing costs of candidate system approaches that may be more manpower intensive against those that may be less manpower-intensive, and (2) comparing hardware, software, and manpower costs of such approaches.

## USER INSTRUCTIONS

To facilitate the use of the life cycle costing data, two indices--by rating title and rating abbreviation--are provided in Appendix A, and the actual data, in Appendix B. This arrangement has been adopted for use in this and succeeding reports so that experienced users will be able to turn directly to the back of the report to find the information necessary for their computations.

### Data Source

The costs included in Appendix B are based upon costing information available in the Enlisted Billet Cost Model (EBCM), which is being maintained by the Chief of Naval Operations (OP-11). The structure and format of the data base for the EBCM were developed by the SECNAV Task Force on Personnel Retention in 1966. Over the years, adjustments have been made in their data base to cope with changing data sources, formats, and availability, and to take advantage of new information as it has become available.

The data elements and sources used in computing the life cycle costs in Appendix B are itemized in Table 1. As shown, the primary sources of data are the various published pay tables and expenditure documents that provide information for the past reporting period as well as justification for, and some detail on, money requirements for the upcoming period. After the expenses have been identified, they are distributed to specific ratings wherever possible--a critical step that results in cost differentiation among ratings. Those that are not applicable to specific ratings are applied equally across all ratings in the annual cost by year or grade element.

### Index Use

The indices in Appendix A provide the user with easy entry into the life cycle billet cost data in Appendix B. For example, if a tactical data system is being designed that will be operated by an Operations Specialist, the user would refer to the Index by Rating Title to find the abbreviation of the rating (OS) and the page number of Appendix B (p. B-15) on which the billet cost information for that rating appears. Alternatively, if the user knows the rating abbreviation, he would refer to the Index by Rating Abbreviation to find the appropriate page number.

### Cost Computation

When the user finds the billet cost information for the rating, he decides on the number and the pay grade (E-2 through E-9) of the personnel needed and the number of years that he anticipates the system will be operational. Most systems have skill requirements equivalent to pay grades ranging from E-4 (entry level operator) to E-7 (highly experienced evaluator). To illustrate, if the user decides that he needed one OS E-4 and that the system will be operational for 10 years, he would locate that pay grade in the first column and read across the row until he comes to the column for the 10-year period. As shown on page B-15, the life cycle billet cost would be \$105,063 for each unit.

Although using costing information in computing life cycle billet costs has led, on occasion, to situations that do not appear to track, such results do, nevertheless, reflect actual cost differences and are based on fact. For example, within some ratings, there are only slight differences in costs between some of the pay grades or reversals between two pay grades (e.g., AOs at the E-3 level cost more than they do at the E-4 level). This is because previously separate specialities have been combined or because



Table 1  
Factors Included in Billet Cost Model Computations

Data Element	Action/Source
Base Pay	1 Oct 1980 OASD (MRA&L) MPP
Clothing Allowance	MPN/Pay Manual <sup>a</sup>
Command and Administration	O&MN
Commissary	O&MN
Death Gratuity	MPN
Dependent School	DoD Dependent School Office
Disability	MPN
E-7 Clothing Allowance	MPN
Family Separation Allowance	MPN
FICA	6.65% of first \$29,700 from SSA
Hazard Pay	MPN
Insurance/Housing (FHA)	DoD McClary Report
Medical Costs	BUMED Comptroller; O&MN, Budget Activity 8
Messing Subsistence	MPN/Pay Manual
Overseas Station Allowance	MPN
Prisoner Apprehension	MPN
Procurement Personnel	MPN
Pro-Pay	Not updated, not yet available from Joint Military Pay System (JUMPS) (small variations in ratings this year)
Quarters Allowance (includes Variable Housing Allowance)	Imputed value from MPN for MILCON equivalent for base housing; MPN Pay Table for off-base housing
Recreation Facilities	In Command/Administration above
Recruiting Costs	O&MN
Reenlistment Bonus	Computed from JUMPS data by rating
Retirement	Computed from force statistics and entitlements from Pay Manual
School Costs	MPN, O&MN, and OPN
Sea and Foreign Duty Pay	MPN
Severance	MPN
Travel	MPN tied to move patterns by grade

<sup>a</sup> MPN/O&MN budgets are from Congressional Submit., January 1981, Pay Manual is DoD Military Pay, Entitlements, Allowance Manual, 1968, as amended.

differences in expenditures such as those for training and the remaining amortization period for such expenses have altered the relative costs.

If the user decides that the system must be staffed by three OS E-4s and one OS E-6, he would refer to Appendix B, make two computations, and add them together to find the total cost per unit.

<u>Rating</u>	<u>Level</u>	<u>10-year Life Cycle</u>	<u>Number of Men</u>	<u>Life Cycle Costs Per Unit</u>
OS	E-4	\$105,063	3	\$315,189
OS	E-6	\$150,274	1	\$150,274
				<u>\$465,463</u>

Next, the user must decide how many hours of each day the system must be manned. For example, if the system is to be operated continuously over a 24-hour period, the initial billet cost estimation per shift for the three E-4s and one E-6 (i.e., \$465,463) must be multiplied by three to account for three 8-hour shifts.

$\$465,463 \text{ per shift} \times 3 \text{ shifts} = \$1,396,389 \text{ per unit.}$

Finally, the user must decide how much life cycle costs for maintenance personnel will add to the total cost of the system. For example, if he decides that the maintenance of the system used in the previous example will require a Data System Technician (DS) at the E-5 level for 8 hours a day and an Electronics Technician (ET) at the E-4 level for 4 hours a day, he would need to compute these costs and add the results of these computations to determine the total estimated life cycle billet costs per unit.

<u>Rating</u>	<u>Level</u>	<u>10-year Life Cycle</u>	<u>Number of Man/Days</u>	<u>Life Cycle Costs</u>
DS	E-5	\$120,926	1.0	\$ 120,926
ET	E-4	\$154,559	0.5	\$ 77,280
Operator Costs (as determined from previous example)				<u>\$1,396,389</u>
				<u>\$1,594,595</u>

As was noted earlier, these estimated life cycle billet costs do not include those cost items relating to nonmilitary personal skill development, officers, and external military tasks. The tables do, however, permit a more nearly accurate assessment of the life cycle costs of operator and maintenance personnel than has previously been possible.

#### Discount Rate Computation

The multiple-year billet cost tables included in this report have been computed using a 10-percent discount rate. According to the Office of Management and Budget (OMB) Circular A-76 (1977), the discount rate can be computed using the average interest rate of long-term treasury notes during the previous 12 months. This equates to approximately a 10-percent discount for this last period and has been used for the computations in this report.

The 1-year cost figures do not reflect a discount or interest rate. Therefore, if the user needs to apply a discount rate other than 10 percent for multiple-year projections, the 1-year costs should be used as the base for such computations. For example, if no discount rate is to be applied and the billet costs for a 10-year period are desired, then the 1-year cost figure should be multiplied by 10. The resultant figure will reflect costs based upon FY80 dollars.

If a discount rate other than that reflected in the cost tables of Appendix B needs to be applied, the following formula can be used with the 1-year cost figure:

$$S_n = \left[ 1 - \left( \frac{1}{1+r} \right)^n \right] \left[ \left( \frac{1+r}{r} \right) (x) \right]$$

where:

- S = Billet cost
- n = Number of years in billet life
- r = Discount rate
- x = Billet cost for first year

For example, the use of a standard 10-percent discount rate is prescribed by OMB Circular A-94 (undated). The billet costs for an Aviation Electrician's Mate (AE), Pay Grade E-2, for a 5-year period have been computed using the following values:

- n = Number of years in billet life = 5
- r = Discount rate = 10 percent = .10
- x = Billet cost for first year = \$16,368<sup>1</sup>

AE (E-2) 5-Year Billet  
Cost using a 10-percent  
discount rate

$$\begin{aligned} &= \left[ 1 - \left( \frac{1}{1+.10} \right)^5 \right] \left[ \left( \frac{1+.10}{.10} \right) (x) \right] \\ &= 1 - (.90909)^5 \times 11 \times 16,368 \\ &= (1 - .6209181) \times 11 \times 16,368 \\ &= .3790819 \times 11 \times 16,368 \\ &= \$68,252.94 \\ &= \$68,253.00^2 \end{aligned}$$

---

<sup>1</sup>Taken from Appendix B, page B-2.

<sup>2</sup>In the appendix, this figure computes to \$68,252 because of rounding in the 4-year cost scale.

## DISCUSSION

When individual billet costs contained in Appendix B are compared with those for FY80 (Koehler, 1980), we find that many ratings reflect increases in costs as one would expect because of the FY81 military pay raise. Other ratings, however, reflect slight to significant decreases in overall costs. These reductions are due to changes in the rating inventory computation methodology and continued refinement in the basic input data used for cost computations.

Changes incorporated in the current report include FY81 base pay, hazard pay, and the new Variable Housing Allowance. Cost data used also includes FY80 actual expenditures for all costs except school costs. School costs used in the computations are based on FY79 actual expenses--the latest available.

The major change in the data base for FY81 is inclusion of the total cost of courses in the school cost data element. Prior year publications included only non-MPN costs in this category.

For all ratings except BM, DM, FTB, and LI, the per capita distribution of school costs was calculated by dividing the total raw school costs by the rating inventories, as controlled by the "LOBAL" computer program. For the above four ratings, the Force Structure Projection Computer Model (known as FAST) was used for computing inventories. Both of these models are controlled by the Naval Military Personnel Command (NMPC-164).

## RECOMMENDATIONS

Hardware developers and cost analysts should use the annual billet and life cycle cost information presented in the appendices to help determine the cost effectiveness of candidate systems. Specifically, data should be used when:

1. Conducting trade-off studies, such as costing various manning concepts involving numbers, mixes of skills, and types of manpower.
2. Comparing manpower and hardware costs for both initial acquisition and life cycle support.
3. Comparing various maintenance support options.
4. Conducting studies where manpower cost is to be considered in the design and selection of hardware systems.

## REFERENCES

- King, W. R. Achieving America's goals--National service or the all-volunteer force. Report to the Senate Committee on Armed Services, February 1977.
- Koehler, E. A. Life cycle Navy enlisted billet costs--FY80 (NPRDC Spec. Rep. 80-7). San Diego: Navy Personnel Research and Development Center, January 1980.
- Office of Director of Defense Research and Engineering (DDR&E). Technology coordination paper--Human resources. Washington, DC: Author, March 1973.
- Office of Management and Budget Circular A-76, Rev. 1. Subj: Policies for Acquiring Commercial or Industrial Products or Services for Government Use, 13 June 1977.
- Office of Management and Budget Circular A-94. Subj: Discount Rates to be Used in Evaluating Time, Distributed Costs, and Benefits, undated.

**APPENDIX A**  
**INDICES BY RATING TITLE AND BY RATING ABBREVIATION**

# INDEX BY RATING TITLE

Rating Title	Abbreviation	Appendix B Page No.
AEROGRAPHER'S MATE	AG	2
AIR TRAFFIC CONTROLLER	AC	1
AIRCRAFT MAINTENANCEMAN (E-9 only)	AF	20
AIRCREW SURVIVAL EQUIPMENTMAN	PR	14
AVIATION ANTISUBMARINE WARFARE OPERATOR	AW	4
Aviation Antisubmarine Warfare Operator (Acoustic)	AW	4
Aviation Antisubmarine Warfare Operator (Helicopter)	AW	4
Aviation Antisubmarine Warfare Operator (Non-Acoustic)	AW	4
AVIATION ANTISUBMARINE WARFARE TECHNICIAN (excludes AVCM)	AX	5
AVIATION BOATSWAIN'S MATE (E-8 through E-9 only)	AB	1
Aviation Boatswain's Mate (Launching & Recovery Equipment)	ABE	1
Aviation Boatswain's Mate (Fuels)	ABF	1
Aviation Boatswain's Mate (Aircraft Handling)	ABH	1
AVIATION ELECTRICIAN'S MATE (excludes AVCM)	AE	2
AVIATION ELECTRONICS TECHNICIAN (excludes AVCM)	AT	4
AVIATION FIRE CONTROL TECHNICIAN (excludes AVCM)	AQ	3
AVIATION MACHINIST'S MATE (excludes AFCM)	AD	2
AVIATION MAINTENANCE ADMINISTRATIONMAN	AZ	5
AVIATION ORDNANCEMAN	AO	3
AVIATION STOREKEEPER	AK	2
AVIATION STRUCTURAL MECHANIC (E-8 only--excludes AFCM)	AM	2
Aviation Structural mechanic (Safety Equipment)	AME	3
Aviation Structural Mechanic (Hydraulics)	AMH	3
Aviation Structural Mechanic (Structures)	AMS	3
AVIATION SUPPORT EQUIPMENT TECHNICIAN (E-6 through E-9 only)	AS	4
Aviation Support Equipment Technician (Electrical)	ASE	4
Aviation Support Equipment Technician (Mechanical)	ASM	4
AVIONICS TECHNICIAN (E-9 only)	AV	20
BOATSWAIN'S MATE	BM	5
BOILER TECHNICIAN	BT	5
BUILDER (excludes CUCM)	BU	5
CRYPTOLOGIC TECHNICIAN	CT	--
Cryptologic Technician (Administrative Branch)	CTA	6
Cryptologic Technician (Interpretive Branch)	CTI	6
Cryptologic Technician (Maintenance Branch)	CTM	6
Cryptologic Technician (Communications Branch)	CTO	7
Cryptologic Technician (Collection Branch)	CTR	7
Cryptologic Technician (Technical Branch)	CTT	7
CONSTRUCTION ELECTRICIAN (excludes UTCM)	CE	6
CONSTRUCTIONMAN (E-9 only)	CU	20
CONSTRUCTION MECHANIC (excludes EQCM)	CM	6

# INDEX BY RATING TITLE (Continued)

Rating Title	Abbreviation	Appendix B Page No.
DATA PROCESSING TECHNICIAN	DP	8
DATA SYSTEMS TECHNICIAN	DS	8
DENTAL TECHNICIAN	DT	8
Dental Technician (General)	DT	8
Dental Technician (Prosthodontics)	DT	8
Dental Technician (Repair)	DT	8
DISBURSING CLERK	DK	7
ELECTRICIAN'S MATE	EM	8
ELECTRONICS TECHNICIAN	ET	9
ELECTRONICS WARFARE TECHNICIAN	EW	9
ENGINEERING AID (excludes CUCM)	EA	8
ENGINEMAN	EN	9
EQUIPMENT OPERATOR (excludes EQCM)	EO	9
EQUIPMENTMAN (E-9 only)	EQ	20
FIRE CONTROL TECHNICIAN (E-8 and E-9 only)	FT	9
Fire Control Technician (Ballistic Missile Fire Control)	FTB	10
Fire Control Technician (Gun Fire Control)	FTG	10
Fire Control Technician (Surface Missile Fire Control)	FTM	10
GAS TURBINE SYSTEM TECHNICIAN (E-8/E-9 only)	GS	11
Gas Turbine System Technician (Electrical)	GSE	11
Gas Turbine System Technician (Mechanical)	GSM	11
GUNNER'S MATE (E-8 and E-9 only--excludes GMT)	GM	10
Gunner's Mate (Guns)	GMG	10
Gunner's Mate (Missiles)	GMM	11
Gunner's Mate (Technician) (E- through E-9)	GMT	11
HOSPITAL CORPSMAN	HM	12
HULL MAINTENANCE TECHNICIAN	HT	12
ILLUSTRATOR DRAFTSMAN	DM	7
INSTRUMENTMAN (excludes PICM)	IM	12
INTELLIGENCE SPECIALIST	IS	12
INTERIOR COMMUNICATIONS ELECTRICIAN (excludes EMCM)	IC	12
JOURNALIST	JO	13
LEGALMAN (E-5 through E-9 only)	LN	13
LITHOGRAPHER	LI	13
MACHINERY REPAIRMAN	MR	14
MACHINIST'S MATE	MM	14
MASTER-AT-ARMS (E-6 through E-9 only)	MA	13
MESS MANAGEMENT SPECIALIST	MS	14
MINEMAN	AN	14
MISSILE TECHNICIAN (excludes FTCS and FTCM)	MT	14
MOLDER	ML	13
MUSICIAN	MU	15
NAVY COUNSELOR (E-6 through E-9 only)	NC	15
OCEAN SYSTEMS TECHNICIAN	OT	15



# INDEX BY RATING TITLE (Continued)

Rating Title	Abbreviation	Appendix B Page No.
OPERATIONS SPECIALIST	OS	15
OPTICALMAN (excludes PICM)	OM	15
PATTERNMAKER (excludes MLCS and MLCM)	PM	16
PERSONNELMAN	PN	16
PHOTOGRAPHER'S MATE	PH	16
POSTAL CLERK	PC	16
PRECISION INSTRUMENTMAN (E-9 only)	PI	20
QUARTERMASTER	QM	17
RADIOMAN	RM	17
RELIGIOUS PROGRAM SPECIALIST	RP	17
SHIP'S SERVICEMAN	SH	17
SIGNALMAN	SM	18
SONAR TECHNICIAN (E-9 only)	ST	18
Sonar Technician (Surface)	STG	18
Sonar Technician (Submarine)	STS	18
STEELWORKER (excludes CUCM)	SW	18
STOREKEEPER	SK	17
TORPEDOMAN'S MATE	TM	19
TRADESMAN	TD	19
UTILITIESMAN	UT	19
YEOMAN	YN	19

# INDEX BY RATING ABBREVIATION

Abbreviation	Appendix B Page No.	Rating Title
AB	1	AVIATION BOATSWAIN'S MATE
ABE	1	Aviation Boatswain's Mate (Launching & Recovery Equipment)
ABF	1	Aviation Boatswain's Mate (Fuels)
ABH	1	Aviation Boatswain's Mate (Aircraft Handling)
AC	1	AIR TRAFFIC CONTROLLER
AD	2	AVIATION MACHINIST'S MATE
AE	2	AVIATION ELECTRICIAN'S MATE
AF	20	AIRCRAFT MAINTENANCEMAN (E-9 only)
AG	2	AEROGRAPHER'S MATE
AK	2	AVIATION STOREKEEPER
AM	2	AVIATION STRUCTURAL MECHANIC
AME	3	Aviation Structural Mechanic (Safety Equipment)
AMH	3	Aviation Structural Mechanic (Hydraulics)
AMS	3	Aviation Structural Mechanic (Structures)
AO	3	AVIATION ORNANCEMAN
AQ	3	AVIATION FIRE CONTROL TECHNICIAN
AS	4	AVIATION SUPPORT EQUIPMENT TECHNICIAN
ASE	4	Aviation Support Equipment Technician (Electrical)
ASM	4	Aviation Support Equipment Technician (Mechanical)
AT	4	AVIATION ELECTRONICS TECHNICIAN
AV	20	AVIONICS TECHNICIAN (E-9 only)
AW	4	AVIATION ANTISUBMARINE WARFARE OPERATOR
AW	4	Aviation Antisubmarine Warfare Operator (Acoustic)
AW	4	Aviation Antisubmarine Warfare Operator (Helicopter)
AW	4	Aviation Antisubmarine Warfare Operator (Non-Acoustic)
AX	5	AVIATION ANTISUBMARINE WARFARE TECHNICIAN
AZ	5	AVIATION MAINTENANCE ADMINISTRATIONMAN
BM	5	BOATSWAIN'S MATE
BT	5	BOILER TECHNICIAN
BU	5	BUILDER
CE	6	CONSTRUCTION ELECTRICIAN
CM	6	CONSTRUCTION MECHANIC
CT	--	CRYPTOLOGIC TECHNICIAN
CTA	6	Cryptologic Technician (Administration Branch)
CTI	6	Cryptologic Technician (Interpretive Branch)
CTM	6	Cryptologic Technician (Maintenance Branch)
CTO	7	Cryptologic Technician (Communications Branch)

# INDEX BY RATING ABBREVIATION (Continued)

Abbreviation	Appendix B Page No.	Rating Title
CTR	7	Cryptologic Technician (Collection Branch)
CTT	7	Cryptologic Technician (Technical Branch)
CU	20	CONSTRUCTIONMAN (E-9 only)
DK	7	DISBURSING CLERK
DM	7	ILLUSTRATOR DRAFTSMAN
DP	8	DATA PROCESSING TECHNICIAN
DS	8	DATA SYSTEMS TECHNICIAN
DT	8	DENTAL TECHNICIAN
DT	8	Dental Technician (General)
DT	8	Dental Technician (Prosthodontics)
DT	8	Dental Technician (Repair)
EA	8	ENGINEERING AID
EM	8	ELECTRICIAN'S MATE
EN	9	ENGINEMAN
EO	9	EQUIPMENT OPERATOR
EQ	20	EQUIPMENTMAN (E-9 only)
ET	9	ELECTRONICS TECHNICIAN
EW	9	ELECTRONICS WARFARE TECHNICIAN
FT	9	FIRE CONTROL TECHNICIAN
FTB	10	Fire Control Technician (Ballistic Missile Fire Control)
FTG	10	Fire Control Technician (Gun Fire Control)
FTM	10	Fire Control Technician (Surface Missile Fire Control)
GM	10	GUNNER'S MATE
GMG	10	Gunner's Mate (Guns)
GMM	11	Gunner's Mate (Missiles)
GMT	11	Gunner's Mate (Technician)
GS	11	GAS TURBINE SYSTEM TECHNICIAN (E-8 and E-9 only)
GSE	11	Gas Turbine System Technician (Electrical)
GSM	11	Gas Turbine System Technician (Mechanical)
HM	12	HOSPITAL CORPSMAN
HT	12	HULL MAINTENANCE TECHNICIAN
IC	12	INTERIOR COMMUNICATIONS ELECTRICIAN
IM	12	INSTRUMENTMAN
IS	12	INTELLIGENCE SPECIALIST
JO	13	JOURNALIST
LI	13	LITHOGRAPHER
LN	11	LEGALMAN
MA	11	MASTER-AT-ARMS
ML	11	MOLDER
MM	11	MACHINIST'S MATE
MN	12	MINEMAN
MR	14	MACHINERY REPAIRMAN
MS	14	MESS MANAGEMENT SPECIALIST
MT	14	MISSILE TECHNICIAN
MU	15	MUSICIAN

# INDEX BY RATING ABBREVIATION (Continued)

Abbreviation	Appendix B Page No.	Rating Title
NC	15	NAVY COUNSELOR
OM	15	OPTICALMAN
OS	15	OPERATIONS SPECIALIST
OT	15	OCEAN SYSTEMS TECHNICIAN
PC	16	POSTAL CLERK
PH	16	PHOTOGRAPHER'S MATE
PI	20	PRECISION INSTRUMENTMAN (E-9 only)
PM	16	PATTERNMAKER (includes MLCM)
PN	16	PERSONNELMAN
PR	16	AIRCREW SURVIVAL EQUIPMENTMAN
QM	17	QUARTERMASTER
RM	17	RADIOMAN
RP	17	RELIGIOUS PROGRAM SPECIALIST
SH	17	SHIP'S SERVICEMAN
SK	17	STOREKEEPER
SM	18	SIGNALMAN
ST	18	SONAR TECHNICIAN
STG	18	Sonar Technician (Surface)
STS	18	Sonar Technician (Submarine)
SW	18	STEELWORKER
TD	19	TRADESMAN
TM	19	TORPEDOMAN'S MATE
TM	19	Torpedoman's Mate (Submarine)
TM	19	Torpedoman's Mate (Surface)
TM	19	Torpedoman's Mate (Technician)
UT	19	UTILITIESMAN
YN	19	YEOMAN

**APPENDIX B**  
**LIFE CYCLE NAVY ENLISTED BILLET COSTS BY RATING AND PAY GRADE**

Table B-1

## Life Cycle Billet Costs by Rating and Pay Grade

Rating	Pay Grade	Years <sup>a</sup>				
		1	5	10	15	20
<u>AVIATION BOATSWAIN'S MATE</u>						
AB	E-2					
AB	E-3					
AB	E-4					
AB	E-5	See ABE, ABF or ABH below as appropriate				
AB	E-6					
AB	E-7					
AB	E-8	23104.	117190.	189956.	235138.	263193.
AB	E-9	31447.	131130.	212552.	263108.	294500.
<u>AVIATION BOATSWAIN'S MATE (Launching &amp; Recovery Equipment)</u>						
ABE	E-2	15008.	62581.	101440.	125568.	140549.
ABE	E-3	16341.	68140.	110449.	136721.	153033.
ABE	E-4	16635.	69366.	112437.	139180.	155786.
ABE	E-5	17916.	74707.	121095.	149898.	167783.
ABE	E-6	21568.	89936.	145779.	180453.	201984.
ABE	E-7	25412.	105965.	171761.	212615.	237982.
ABE	E-8	See AB above for LCC data at pay grades E-8 & E-9				
ABE	E-9					
<u>AVIATION BOATSWAIN'S MATE (Fuels)</u>						
ABF	E-2	12522.	52215.	84637.	104768.	117268.
ABF	E-3	13753.	57348.	92957.	115067.	128796.
ABF	E-4	15282.	63724.	103292.	127860.	143115.
ABF	E-5	18505.	77163.	125076.	154826.	173299.
ABF	E-6	21476.	89552.	145157.	179684.	201122.
ABF	E-7	25149.	104368.	169983.	210415.	235519.
ABF	E-8	See AB above for LCC data at pay grades E-8 & E-9				
ABF	E-9					
<u>AVIATION BOATSWAIN'S MATE (Aircraft Handling)</u>						
ABH	E-2	18638.	77718.	125975.	155939.	174544.
ABH	E-3	19758.	82388.	133545.	165310.	185033.
ABH	E-4	18548.	77343.	125367.	155186.	173701.
ABH	E-5	18745.	78164.	126698.	156834.	175546.
ABH	E-6	22270.	92863.	150524.	186327.	208558.
ABH	E-7	25100.	104664.	169652.	210005.	235061.
ABH	E-8	See AB above for LCC data at pay grades E-8 & E-9				
ABH	E-9					
<u>AIR TRAFFIC CONTROLLER</u>						
AC	E-2	13432.	56010.	90787.	112382.	125790.
AC	E-3	15279.	63711.	103271.	127835.	143087.
AC	E-4	16721.	69724.	113018.	139900.	156592.
AC	E-5	18762.	78235.	126813.	156976.	175705.
AC	E-6	23900.	99660.	161541.	199965.	223823.
AC	E-7	27220.	113504.	183981.	227742.	254914.
AC	E-8	29021.	121014.	196154.	242811.	271781.
AC	E-9	31877.	132923.	215458.	266706.	298527.

<sup>a</sup>Cost figures for 5, 10, 15 and 20 years reflect a 10 percent discount rate. If discounted costs are not desired, use the "1" year cost multiplied by the number of years.

Table B-1 (Continued)

Rating	Pay Grade	Years <sup>a</sup>				
		1	5	10	15	20
<u>AVIATION MACHINIST'S MATE</u>						
AD	E-2	14425.	60150.	97499.	120690.	135090.
AD	E-3	15365.	64070.	103853.	128555.	143893.
AD	E-4	16345.	68157.	110477.	136754.	153070.
AD	E-5	18680.	77893.	126259.	156290.	174938.
AD	E-6	23167.	96603.	156587.	193832.	216958.
AD	E-7	25574.	106640.	172856.	213970.	239500.
AD	E-8	28774.	119984.	194485.	240744.	269467.
AD	E-9	See AV (p. B-20) for LCC data at pay grade E-9				
<u>AVIATION ELECTRICIAN'S MATE</u>						
AE	E-2	16368.	68252.	110632.	136946.	153286.
AE	E-3	17278.	72047.	116783.	144560.	161808.
AE	E-4	18018.	75133.	121784.	150752.	168738.
AE	E-5	18316.	76375.	123799.	153245.	171529.
AE	E-6	22859.	95319.	154505.	191255.	214074.
AE	E-7	25880.	107916.	174924.	216531.	242365.
AE	E-8	28233.	117728.	190828.	236218.	264401.
AE	E-9	See AV (p. B-20) for LCC data at pay grade E-9				
<u>AEROGRAPHER'S MATE</u>						
AG	E-2	13522.	56385.	91396.	113135.	126633.
AG	E-3	14698.	61289.	99344.	122974.	137646.
AG	E-4	15847.	66080.	107111.	132587.	148407.
AG	E-5	17664.	73657.	119392.	147790.	165423.
AG	E-6	22991.	95869.	155397.	192359.	215310.
AG	E-7	25670.	107041.	173505.	214774.	240399.
AG	E-8	28824.	120192.	194823.	241162.	269936.
AG	E-9	31438.	131092.	212491.	263033.	294416.
<u>AVIATION STOREKEEPER</u>						
AK	E-2	15139.	63128.	102325.	126664.	141776.
AK	E-3	16395.	68365.	110814.	137172.	153539.
AK	E-4	16479.	68715.	111382.	137875.	154325.
AK	E-5	18414.	76784.	124461.	154065.	172446.
AK	E-6	22721.	94744.	153572.	190100.	212781.
AK	E-7	25310.	105539.	171071.	211762.	237027.
AK	E-8	27966.	116615.	189023.	233984.	261901.
AK	E-9	31563.	131614.	213336.	264079.	295586.
<u>AVIATION STRUCTURAL MECHANIC</u>						
AM	E-2					
AM	E-3					
AM	E-4					
AM	E-5	See AME, AMH or AMS below as appropriate for				
AM	E-6	LCC data at pay grades E-2 through E-7				
AM	E-7					
AM	E-8	27831.	116052.	188111.	232854.	260636.
AM	E-9	See AF (p. B-20) for LCC data at pay grade E-9				

<sup>a</sup>Cost figures for 5, 10, 15 and 20 years reflect a 10 percent discount rate. If discounted costs are not desired, use the "1" year cost multiplied by the number of years.

Table B-1 (Continued)

Rating Pay Grade	Years <sup>a</sup>				
	1	5	10	15	20
<u>AVIATION STRUCTURAL MECHANIC (Safety Equipment)</u>					
AME E-2	12632.	52674.	85380.	105688.	118298.
AME E-3	13725.	57231.	92768.	114833.	128534.
AME E-4	15057.	62786.	101771.	125978.	141008.
AME E-5	17345.	72326.	117236.	145121.	162435.
AME E-6	22773.	94960.	153924.	190535.	213268.
AME E-7	25126.	104772.	169828.	210222.	235304.
AME E-8	See AM above for LCC data at pay grade E-8				
AME E-9	See AF (p. B-20) for LCC data at pay grade E-9				
<u>AVIATION STRUCTURAL MECHANIC (Hydraulics)</u>					
AMH E-2	15607.	65079.	105488.	130579.	146159.
AMH E-3	17052.	71105.	115255.	142669.	159691.
AMH E-4	17101.	71309.	115536.	143079.	160150.
AMH E-5	18741.	78148.	126671.	156801.	175509.
AMH E-6	22566.	94097.	152524.	188803.	211330.
AMH E-7	25331.	105835.	171551.	212356.	237692.
AMH E-8	See AM above for LCC data at pay grade E-8				
AMH E-9	See AF (p. B-20) for LCC data at pay grade E-9				
<u>AVIATION STRUCTURAL MECHANIC (Structures)</u>					
AMS E-2	15604.	65067.	105468.	130554.	146131.
AMS E-3	17089.	71259.	115505.	142979.	160038.
AMS E-4	17032.	71230.	115458.	142920.	159972.
AMS E-5	18627.	77672.	125901.	155847.	174441.
AMS E-6	22535.	93968.	152315.	188544.	211039.
AMS E-7	25743.	107345.	173998.	215384.	241082.
AMS E-8	See AM (p. B-2) for LCC data at pay grade E-8				
AMS E-9	See AF (p. B-20) for LCC data at pay grade E-9				
<u>AVIATION ORDNANCEMAN</u>					
AO E-2	15504.	64650.	104792.	129718.	145194.
AO E-3	17047.	71084.	115221.	142627.	159645.
AO E-4	16920.	70554.	114363.	141565.	158455.
AO E-5	17983.	75008.	121582.	150501.	168457.
AO E-6	22633.	94398.	153011.	189406.	212004.
AO E-7	25771.	107462.	174187.	215619.	241344.
AO E-8	23929.	120630.	195532.	242041.	270919.
AO E-9	31608.	131801.	213640.	264455.	296008.
<u>AVIATION FIRE CONTROL TECHNICIAN</u>					
AQ E-2	18041.	75229.	121940.	150944.	168953.
AQ E-3	18944.	78394.	128043.	158499.	177410.
AQ E-4	21534.	89794.	145549.	180169.	201665.
AQ E-5	20239.	84602.	137134.	169752.	190006.
AQ E-6	23130.	96449.	156337.	193522.	216612.
AQ E-7	26434.	110226.	178668.	221166.	247553.
AQ E-8	29387.	124625.	202007.	250056.	279891.
AQ E-9	See AV (p. B-20) for LCC data at pay grade E-9				

<sup>a</sup>Cost figures for 5, 10, 15 and 20 years reflect a 10 percent discount rate. If discounted costs are not desired, use the "1" year cost multiplied by the number of years.



Table B-1 (Continued)

Rating	Pay Grade	Years <sup>a</sup>				
		1	5	10	15	20
<u>AVIATION SUPPORT EQUIPMENT TECHNICIAN</u>						
AS	E-2					
AS	E-3	See ASE or ASM below as appropriate for LCC				
AS	E-4	data at pay grades E-2 through E-5				
AS	E-5					
AS	E-6	23358.	97400.	157878.	195430.	218747.
AS	E-7	25311.	105544.	171078.	211770.	237037.
AS	E-8	28710.	119717.	194052.	240209.	268868.
AS	E-9	31689.	132139.	214187.	265133.	296766.
<u>AVIATION SUPPORT EQUIPMENT TECHNICIAN (Electrical)</u>						
ASE	E-2	16955.	70700.	114600.	141858.	158783.
ASE	E-3	17858.	74466.	120703.	149413.	167240.
ASE	E-4	17554.	73198.	118648.	146869.	164393.
ASE	E-5	18567.	77422.	125495.	155345.	173879.
ASE	E-6	See AS above for LCC data at pay grades E-6,				
ASE	E-7	E-7, E-8 and E-9				
ASE	E-8					
ASE	E-9					
<u>AVIATION SUPPORT EQUIPMENT TECHNICIAN (Mechanical)</u>						
ASM	E-2	16180.	67468.	109361.	135374.	151525.
ASM	E-3	17761.	74061.	120047.	148601.	166331.
ASM	E-4	16927.	70583.	114410.	141623.	158521.
ASM	E-5	18554.	77368.	125407.	155236.	173758.
ASM	E-6	See AS above for LCC data at pay grades E-6,				
ASM	E-7	E-7, E-8 and E-9				
ASM	E-8					
ASM	E-9					
<u>AVIATION ELECTRONICS TECHNICIAN</u>						
AT	E-2	18304.	76325.	123717.	153144.	171416.
AT	E-3	19220.	80145.	129909.	160808.	179995.
AT	E-4	21590.	90027.	145928.	180637.	202190.
AT	E-5	20185.	84169.	136431.	168882.	189032.
AT	E-6	23717.	98897.	160304.	198433.	222109.
AT	E-7	26710.	111377.	180534.	223475.	250138.
AT	E-8	28719.	119754.	194113.	240284.	268952.
AT	E-9	See AV (p. B-20) for LCC data at pay grade E-9				
<u>AVIATION ANTISUBMARINE WARFARE OPERATOR</u>						
AW	E-2	14745.	61485.	99662.	123367.	138086.
AW	E-3	15588.	65000.	105360.	130420.	145981.
AW	E-4	16890.	70429.	114160.	141314.	158174.
AW	E-5	19333.	80616.	130673.	161754.	181053.
AW	E-6	23644.	98592.	159811.	197823.	221425.
AW	E-7	27406.	114279.	185238.	229298.	256656.
AW	E-8	29194.	121735.	197323.	244258.	273401.
AW	E-9	32775.	136667.	221528.	274219.	306937.

<sup>a</sup>Cost figures for 5, 10, 15 and 20 years reflect a 10 percent discount rate. If discounted costs are not desired, use the "1" year cost multiplied by the number of years.

Table B-1 (Continued)

Rating	Pay Grade	Years <sup>a</sup>				
		1	5	10	15	20
AVIATION ANTISUBMARINE WARFARE TECHNICIAN						
AX	E-2	18603.	77572.	125738.	155646.	174216.
AX	E-3	21235.	88547.	143528.	177667.	198865.
AX	E-4	21961.	91575.	148435.	183742.	205664.
AX	E-5	20514.	85541.	138655.	171635.	192113.
AX	E-6	22469.	93593.	151869.	187992.	210421.
AX	E-7	25920.	103083.	175194.	216865.	242740.
AX	E-8	29144.	121527.	196985.	243840.	272933.
AX	E-9	See AV (p. B-20) for LCC data at pay grade E-9				
AVIATION MAINTENANCE ADMINISTRATIONMAN						
AZ	E-2	14853.	61935.	100392.	124271.	139098.
AZ	E-3	15756.	65700.	106495.	131826.	147554.
AZ	E-4	16129.	67256.	109017.	134947.	151048.
AZ	E-5	18490.	77101.	124975.	154701.	173158.
AZ	E-6	23330.	97283.	157688.	195196.	218485.
AZ	E-7	24956.	104063.	163579.	203800.	233712.
AZ	E-8	28421.	118512.	192099.	237791.	266162.
AZ	E-9	31583.	131697.	213471.	264246.	295774.
BOATSWAIN'S MATE						
BM	E-2	12247.	51274.	83116.	102886.	115161.
BM	E-3	13932.	58095.	94167.	116565.	130473.
BM	E-4	14793.	61685.	99986.	123769.	138536.
BM	E-5	17802.	74232.	120324.	148944.	166715.
BM	E-6	22088.	95073.	154025.	190661.	213409.
BM	E-7	24800.	103413.	167624.	207495.	232251.
BM	E-8	28282.	117937.	191159.	236628.	264860.
BM	E-9	31552.	131568.	213261.	263982.	295483.
BOILER TECHNICIAN						
BT	E-2	12797.	53362.	86495.	107069.	119843.
BT	E-3	13885.	57899.	93249.	116172.	130033.
BT	E-4	14908.	62164.	100764.	124731.	139613.
BT	E-5	17654.	73615.	113324.	147706.	165329.
BT	E-6	23176.	96641.	156648.	193907.	217042.
BT	E-7	26362.	109926.	178182.	220563.	246879.
BT	E-8	29377.	122498.	198560.	245739.	275115.
BT	E-9	30721.	128103.	207644.	257034.	287701.
BUILDER						
BU	E-2	12250.	51081.	82798.	102492.	114721.
BU	E-3	13153.	54846.	88902.	110047.	123177.
BU	E-4	14893.	62102.	100662.	124606.	139472.
BU	E-5	18631.	77689.	125928.	155380.	174479.
BU	E-6	23032.	96249.	156012.	193121.	216162.
BU	E-7	25692.	107152.	173653.	214958.	240605.
BU	E-8	29678.	123753.	200595.	248307.	277933.
BU	E-9	See BU (p. B-20) for LCC data at pay grade E-9				

<sup>a</sup>Cost figures for 5, 10, 15 and 20 years reflect a 10 percent discount rate. If discounted costs are not desired, use the "1" year cost multiplied by the number of years.

Table B-1 (Continued)

Rating	Pay Grade	Years <sup>a</sup>				
		1	5	10	15	20
<b>CONSTRUCTION ELECTRICIAN</b>						
CE	E-2	12893.	53762.	87144.	107872.	120742.
CE	E-3	13249.	55247.	89551.	110851.	124076.
CE	E-4	15074.	62857.	101886.	126120.	141167.
CE	E-5	19185.	79999.	129672.	160516.	179667.
CE	E-6	23923.	99756.	161697.	200157.	224038.
CE	E-7	26283.	109597.	177648.	219902.	246139.
CE	E-8	29797.	124250.	201399.	249303.	279048.
CE	E-9	See UT (p. B-20) for LCC data at pay grade E-9				
<b>CONSTRUCTION MECHANIC</b>						
CM	E-2	12880.	53708.	87056.	107763.	120621.
CM	E-3	13236.	55192.	89463.	110742.	123955.
CM	E-4	14870.	62006.	100507.	124413.	139257.
CM	E-5	18575.	77455.	125549.	155412.	173954.
CM	E-6	24095.	100473.	162859.	201596.	225649.
CM	E-7	25940.	108166.	175329.	217033.	242927.
CM	E-8	29018.	121001.	196134.	242785.	271753.
CM	E-9	See EQ (p. B-20) for LCC data at pay grade E-9				
<b>CRYPTOLOGIC TECHNICIAN (Administrative Branch)</b>						
CTA	E-2	13238.	55201.	89476.	110759.	123973.
CTA	E-3	14107.	58824.	95350.	118029.	132112.
CTA	E-4	15094.	62940.	102021.	126287.	141355.
CTA	E-5	17411.	72602.	117682.	145673.	163053.
CTA	E-6	21922.	91412.	148172.	183415.	205299.
CTA	E-7	24505.	102183.	165630.	205026.	229488.
CTA	E-8	28155.	117403.	190301.	235565.	263671.
CTA	E-9	30466.	127039.	205921.	254900.	285313.
<b>CRYPTOLOGIC TECHNICIAN (Interpretive Branch)</b>						
CTI	E-2	13236.	55192.	89463.	110742.	123955.
CTI	E-3	14658.	61122.	99074.	122639.	137272.
CTI	E-4	15598.	65042.	105428.	130504.	146075.
CTI	E-5	17767.	74086.	120088.	148652.	166387.
CTI	E-6	23578.	98317.	159365.	197271.	220807.
CTI	E-7	26228.	109367.	177276.	219442.	245624.
CTI	E-8	28050.	116965.	189591.	234686.	262687.
CTI	E-9	30463.	127027.	205901.	254875.	285285.
<b>CRYPTOLOGIC TECHNICIAN (Maintenance Branch)</b>						
CTM	E-2	14906.	62156.	100750.	124714.	139594.
CTM	E-3	15809.	65921.	106854.	132269.	148051.
CTM	E-4	17696.	73790.	119608.	148057.	165722.
CTM	E-5	21331.	88947.	144177.	178470.	199764.
CTM	E-6	24640.	102746.	166543.	206156.	230753.
CTM	E-7	28702.	119684.	193998.	240142.	268793.
CTM	E-8	31358.	130759.	211950.	262364.	293667.
CTM	E-9	30868.	128716.	208638.	258264.	289078.

<sup>a</sup>Cost figures for 5, 10, 15 and 20 years reflect a 10 percent discount rate. If discounted costs are not desired, use the "1" year cost multiplied by the number of years.

Table B-1 (Continued)

RAILINE Pay Grade	Years <sup>a</sup>				
	1	5	10	15	20
CRYPTOLOGIC TECHNICIAN (Communications Branch)					
CTO E-2	13142.	54800.	88807.	109955.	123074.
CTO E-3	13989.	58352.	94552.	117042.	131006.
CTO E-4	15293.	63770.	103366.	127952.	143218.
CTO E-5	17377.	72460.	112452.	145388.	162735.
CTO E-6	21939.	91683.	148087.	183557.	205458.
CTO E-7	24635.	102725.	166507.	206114.	230706.
CTO E-8	28334.	118149.	191511.	237063.	265347.
CTO E-9	31558.	131593.	213302.	264037.	295540.
CRYPTOLOGIC TECHNICIAN (Collection Branch)					
CTR E-2	14173.	59100.	95796.	118582.	132730.
CTR E-3	15079.	62877.	101920.	126162.	141214.
CTR E-4	15947.	66497.	107786.	133424.	149343.
CTR E-5	18147.	75671.	122656.	151831.	169946.
CTR E-6	23983.	100006.	162102.	200659.	224600.
CTR E-7	25656.	106782.	173410.	214657.	240268.
CTR E-8	29084.	121276.	196780.	243338.	272371.
CTR E-9	31458.	131176.	212626.	263200.	294603.
CRYPTOLOGIC TECHNICIAN (Technical Branch)					
CTT E-2	12642.	52715.	85448.	105772.	118392.
CTT E-3	13552.	56510.	91599.	113386.	126914.
CTT E-4	15257.	62786.	101771.	125978.	141008.
CTT E-5	17425.	72860.	112776.	145790.	163185.
CTT E-6	23598.	98491.	159500.	197438.	220994.
CTT E-7	26080.	108780.	176276.	218204.	244238.
CTT E-8	29107.	121322.	198735.	245530.	272586.
CTT E-9	31447.	131180.	210552.	263108.	294500.
DISBURSING CLERK					
DK E-2	13696.	57111.	92507.	114591.	128263.
DK E-3	14646.	61114.	99080.	122623.	137253.
DK E-4	15605.	65121.	105475.	132563.	146140.
DK E-5	17636.	73951.	112702.	142555.	165161.
DK E-6	23073.	99377.	157709.	191372.	214205.
DK E-7	25375.	105890.	171511.	212306.	237636.
DK E-8	28832.	121276.	194077.	241229.	270011.
DK E-9	31513.	131476.	213031.	263702.	295165.
ILLUSTRATOR DRAFTSMAN					
DM E-2	12470.	50777.	83771.	104100.	118310.
DM E-3	13370.	54777.	89771.	112452.	126936.
DM E-4	14270.	58777.	95771.	119368.	133610.
DM E-5	16383.	70777.	112771.	141004.	157828.
DM E-6	21711.	94777.	147771.	177475.	198650.
DM E-7	23408.	100777.	163771.	200324.	224225.
DM E-8	26777.	111777.	187771.	232923.	249520.
DM E-9	28382.	121777.	197771.	241229.	270011.

<sup>a</sup>Cost figures for 5, 10, 15 and 20 years reflect a 10 percent discount rate. If discounted costs are not desired, use the "1" year cost multiplied by the number of years.

Table B-1 (Continued)

Rating Pay Grade	Years <sup>a</sup>				
	1	5	10	15	20
<u>DATA PROCESSING TECHNICIAN</u>					
DP E-2	13335.	55605.	90132.	111570.	124882.
DP E-3	14145.	58983.	95607.	118347.	132467.
DP E-4	15253.	63603.	103096.	127618.	142844.
DP E-5	17283.	72068.	116816.	144602.	161855.
DP E-6	23128.	96441.	156323.	193505.	216593.
DP E-7	25347.	105694.	171321.	212071.	237374.
DP E-8	28188.	117540.	190524.	235841.	263980.
DP E-9	30471.	127060.	205955.	254942.	285360.
<u>DATA SYSTEMS TECHNICIAN</u>					
DS E-2	12688.	52907.	85759.	106157.	118823.
DS E-3	13380.	57878.	93815.	116130.	129986.
DS E-4	14580.	60797.	98547.	121987.	136541.
DS E-5	17891.	74603.	120926.	149689.	167549.
DS E-6	22548.	94022.	152403.	188653.	211161.
DS E-7	25725.	107270.	173876.	215234.	240914.
DS E-8	28699.	119671.	193978.	240116.	268765.
DS E-9	32163.	134116.	217391.	269099.	301205.
<u>DENTAL TECHNICIAN</u>					
DT E-2	15856.	66117.	107171.	132663.	148491.
DT E-3	22245.	92759.	150355.	186118.	208324.
DT E-4	24550.	102370.	165934.	205403.	229910.
DT E-5	20530.	85607.	138763.	171769.	192263.
DT E-6	23741.	98997.	160466.	198634.	222334.
DT E-7	26231.	109380.	177296.	219467.	245652.
DT E-8	28349.	118212.	191612.	237188.	265487.
DT E-9	31562.	131609.	213329.	264070.	295577.
<u>ENGINEERING AID</u>					
EA E-2	12418.	51781.	83934.	103898.	116294.
EA E-3	13321.	55547.	90037.	111453.	124751.
EA E-4	14627.	60993.	93864.	122380.	136981.
EA E-5	18895.	78790.	127712.	158089.	176951.
EA E-6	23475.	97888.	158668.	196409.	219843.
EA E-7	25174.	104972.	170152.	210624.	235754.
EA E-8	28132.	117307.	190145.	235373.	263455.
EA E-9	See CU (p. B-20) for LCC data at pay grade E-9				
<u>ELECTRICIAN'S MATE<sup>b</sup></u>					
EM E-2	16221.	67639.	109638.	135717.	151909.
EM E-3	17124.	71405.	115742.	143272.	160366.
EM E-4	19202.	80070.	129787.	160658.	179826.
EM E-5	19096.	79628.	129071.	159771.	178833.
EM E-6	22344.	93172.	151024.	186946.	209251.
EM E-7	25521.	106419.	172497.	213527.	239003.
EM E-8	29522.	123103.	199540.	247002.	276472.
EM E-9	31839.	132764.	215201.	266388.	298171.

<sup>a</sup>Cost figures for 5, 10, 15 and 20 years reflect a 10 percent discount rate. If discounted costs are not desired, use the "1" year cost multiplied by the number of years.

<sup>b</sup>EM and IC ratings join at the EM E-9 pay grade.

Table B-1 (Continued)

Rating	Pay Grade	Years <sup>a</sup>				
		1	5	10	15	20
<u>ENGINEMAN</u>						
EN	E-2	12527.	52236.	84670.	104810.	117315.
EN	E-3	13729.	57248.	92795.	114867.	128572.
EN	E-4	15029.	62669.	101582.	125743.	140746.
EN	E-5	17004.	71738.	116283.	143941.	161115.
EN	E-6	22346.	95682.	155093.	191983.	214888.
EN	E-7	25676.	107066.	173545.	214824.	240455.
EN	E-8	27233.	121272.	196573.	243329.	272361.
EN	E-9	31733.	132322.	214485.	265501.	297178.
<u>EQUIPMENT OPERATOR</u>						
EO	E-2	12715.	53020.	85941.	106333.	119076.
EO	E-3	13837.	54363.	88118.	109077.	122091.
EO	E-4	14672.	61180.	99169.	122757.	137403.
EO	E-5	20427.	85178.	138067.	170907.	191298.
EO	E-6	25314.	104305.	169071.	209285.	234255.
EO	E-7	26977.	112491.	182339.	225709.	252639.
EO	E-8	29795.	124241.	201386.	249286.	279029.
EO	E-9	See EQ (p. B-20) for LCC data at pay grade E-9				
<u>ELECTRONICS TECHNICIAN</u>						
ET	E-2	19016.	79294.	128530.	159102.	178084.
ET	E-3	19912.	83060.	134633.	166657.	186541.
ET	E-4	22867.	95352.	154559.	191322.	214149.
ET	E-5	22872.	95373.	154593.	191364.	214195.
ET	E-6	23394.	97550.	158121.	195731.	219084.
ET	E-7	27118.	113079.	183292.	226839.	253959.
ET	E-8	30359.	126593.	205198.	254005.	284311.
ET	E-9	31093.	129654.	210159.	260146.	291185.
<u>ELECTRONICS WARFARE TECHNICIAN</u>						
EW	E-2	19307.	80508.	130497.	161536.	180809.
EW	E-3	22227.	92684.	150233.	185967.	208155.
EW	E-4	22927.	95603.	154965.	191824.	214711.
EW	E-5	21140.	88151.	142886.	176872.	197975.
EW	E-6	22698.	94648.	153417.	189908.	212566.
EW	E-7	26245.	109438.	177391.	219585.	245783.
EW	E-8	29311.	122223.	198114.	245237.	274496.
EW	E-9	32271.	134566.	218121.	270002.	302217.
<u>FIRE CONTROL TECHNICIAN<sup>c</sup></u>						
FT	E-2	See FTB, FTG or FTM as appropriate for LCC data at pay grades E-2 through E-7				
FT	E-3					
FT	E-4					
FT	E-5					
FT	E-6					
FT	E-7					
FT	E-8	27900.	116339.	188577.	233431.	261283.
FT	E-9	30764.	128282.	207935.	257394.	288104.

<sup>a</sup>Cost figures for 5, 10, 15 and 20 years reflect a 10 percent discount rate. If discounted costs are not desired, use the "1" year cost multiplied by the number of years.

<sup>c</sup>FT and MT ratings join at the FT E-8 and E-9 pay grades.

Table B-1 (Continued)

Rating Pay Grade	Years <sup>a</sup>				
	1	5	10	15	20
<b>FIRE CONTROL TECHNICIAN (Ballistic Missile Fire Control)</b>					
FTB E-2	15671.	65346.	105921.	131115.	146758.
FTB E-3	17886.	74499.	120757.	149480.	167314.
FTB E-4	18643.	77739.	126009.	155981.	174591.
FTB E-5	22951.	95703.	155127.	192025.	214935.
FTB E-6	23760.	99076.	160595.	198793.	222512.
FTB E-7	31966.	133294.	216059.	267451.	299360.
FTB E-8	See FT above for LCC data at pay grades E-8				
FTB E-9	and E-9				
<b>FIRE CONTROL TECHNICIAN (Gun Fire Control)</b>					
FTG E-2	15555.	64862.	105137.	130144.	145672.
FTG E-3	17391.	72518.	117546.	145506.	162866.
FTG E-4	18091.	75437.	122278.	151362.	169422.
FTG E-5	18656.	77793.	126097.	156090.	174713.
FTG E-6	21340.	88985.	144238.	178546.	199848.
FTG E-7	24914.	103888.	168395.	208448.	233319.
FTG E-8	See FT above for LCC data at pay grades E-8 and				
FTG E-9	E-9				
<b>FIRE CONTROL TECHNICIAN (Surface Missile Fire Control)</b>					
FIM E-2	14396.	60029.	97303.	120447.	134818.
FIM E-3	16198.	67544.	109483.	135524.	151694.
FIM E-4	16898.	70462.	114214.	141381.	158249.
FIM E-5	19111.	79690.	129172.	159896.	178974.
FIM E-6	22568.	94106.	152538.	188820.	211349.
FIM E-7	26627.	111031.	179973.	222781.	249361.
FIM E-8	See FT above for LCC data at pay grades E-8				
FIM E-9	and E-9				
<b>GUNNER'S MATE</b>					
GM E-2					
GM E-3	See GMG or GMM below as appropriate for LCC data				
GM E-4	at pay grades E-2 through E-7				
GM E-5					
GM E-6					
GM E-7					
GM E-8	27867.	116202.	188354.	233155.	260973.
GM E-9	31526.	131459.	213085.	263769.	295240.
<b>GUNNER'S MATE (Guns)</b>					
GMG E-2	17923.	74757.	121176.	149999.	167895.
GMG E-3	19169.	79932.	129564.	160382.	179517.
GMG E-4	17845.	74411.	120615.	149304.	167118.
GMG E-5	18150.	75600.	122541.	151689.	169787.
GMG E-6	22830.	94573.	153295.	189757.	212397.
GMG E-7	25516.	106398.	172464.	213485.	238956.
GMG E-8	See GM above for LCC data at pay grades E-8 and				
GMG E-9	E-9				

<sup>a</sup> Cost figures for 5, 10, 15 and 20 years reflect a 10 percent discount rate. If discounted costs are not desired, use the "1" year cost multiplied by the number of years.

Table B-1 (Continued)

Rating Pay Grade	Years <sup>a</sup>				
	1	5	10	15	20
<u>GUNNER'S MATE (Missiles)</u>					
GMM E-2	15579.	64962.	105299.	130345.	145897.
GMM E-3	17138.	71463.	115836.	143389.	160497.
GMM E-4	17210.	71763.	116323.	143991.	161171.
GMM E-5	19117.	79715.	129213.	159947.	179030.
GMM E-6	23063.	96170.	155884.	192962.	215984.
GMM E-7	26326.	109776.	177938.	220262.	246542.
GMM E-8	See GM above for LCC data at pay grades E-8 and				
GMM E-9	E-9				
<u>GUNNER'S MATE (Technician)</u>					
GMT E-2	14244.	59396.	96276.	119176.	133395.
GMT E-3	15147.	63161.	102379.	126731.	141851.
GMT E-4	16242.	67727.	109780.	135892.	152106.
GMT E-5	18322.	76400.	123839.	153295.	171585.
GMT E-6	23682.	98751.	160068.	198141.	221781.
GMT E-7	26046.	108608.	176046.	217920.	243920.
GMT E-8	29604.	123445.	200095.	247688.	277240.
GMT E-9	30761.	128269.	207915.	257369.	288076.
<u>GAS TURBINE SYSTEM TECHNICIAN</u>					
GS E-2					
GS E-3					
GS E-4	See GSE or GSM as appropriate for LCC data at				
GS E-5	pay grades E-2 through E-7				
GS E-6					
GS E-7					
GS E-8	29256.	121994.	197742.	244777.	273981.
GS E-9	30537.	127335.	206401.	255495.	285978.
<u>GAS TURBINE SYSTEM TECHNICIAN (Electrical)</u>					
GSE E-2	20949.	87355.	141595.	175274.	196187.
GSE E-3	24651.	102791.	166617.	206248.	230856.
GSE E-4	25351.	105710.	171348.	212105.	237411.
GSE E-5	21744.	90670.	146969.	181926.	203632.
GSE E-6	22642.	94414.	153038.	189439.	212042.
GSE E-7	26237.	109405.	177337.	219518.	245709.
GSE E-8	See GS above for LCC data at pay grades E-8 and				
GSE E-9	E-9				
<u>GAS TURBINE SYSTEM TECHNICIAN (Mechanical)</u>					
GSM E-2	14930.	62256.	100912.	124915.	139819.
GSM E-3	15833.	66022.	107016.	132470.	148275.
GSM E-4	17105.	71326.	115613.	143113.	160188.
GSM E-5	18586.	77501.	125624.	155504.	174057.
GSM E-6	24182.	100836.	163447.	202324.	226464.
GSM E-7	26949.	112374.	182149.	225475.	252376.
GSM E-8	See GS above for LCC data at pay grades E-8 and				
GSM E-9	E-9				

<sup>a</sup>Cost figures for 5, 10, 15 and 20 years reflect a 10 percent discount rate. If discounted costs are not desired, use the "1" year cost multiplied by the number of years.



Table B-1

## Life Cycle Billet Costs by Rating and Pay Grade

Rating	Pay Grade	Years <sup>a</sup>				
		1	5	10	15	20
<u>HOSPITAL CORPSMAN</u>						
HM	E-2	12870.	53666.	86989.	107680.	120527.
HM	E-3	13306.	55484.	89936.	111328.	124610.
HM	E-4	14926.	62239.	100885.	124882.	139781.
HM	E-5	17257.	71959.	116641.	144384.	161611.
HM	E-6	22102.	92162.	149388.	184921.	206984.
HM	E-7	25175.	104976.	170159.	210632.	235763.
HM	E-8	28463.	118687.	192383.	238142.	266555.
HM	E-9	31531.	131480.	213119.	263811.	295287.
<u>HULL MAINTENANCE TECHNICIAN</u>						
HT	E-2	13380.	55793.	90436.	111947.	125303.
HT	E-3	14577.	60784.	98527.	121962.	136513.
HT	E-4	15503.	64645.	104785.	129709.	145185.
HT	E-5	17644.	73573.	119256.	147622.	165235.
HT	E-6	22642.	94414.	153038.	189439.	212042.
HT	E-7	25558.	106574.	172748.	213837.	239350.
HT	E-8	29105.	121364.	196722.	243513.	272567.
HT	E-9	31556.	131584.	213288.	264020.	295521.
<u>INTERIOR COMMUNICATIONS ELECTRICIAN<sup>d</sup></u>						
IC	E-2	15431.	64345.	104299.	129107.	144511.
IC	E-3	17271.	72018.	116735.	144502.	161742.
IC	E-4	18138.	75633.	122595.	151756.	169862.
IC	E-5	19016.	79294.	128530.	159102.	178084.
IC	E-6	22417.	93476.	151517.	187557.	209934.
IC	E-7	26674.	111227.	180291.	223174.	249801.
IC	E-8	29745.	124033.	201048.	248868.	278561.
IC	E-9	See EM	(p. B-8) for LCC data at pay grade E-9			
<u>INSTRUMENTMAN</u>						
IM	E-2	13872.	57844.	93761.	116063.	129911.
IM	E-3	15264.	63649.	103170.	127710.	142947.
IM	E-4	16293.	67940.	110125.	136319.	152583.
IM	E-5	18598.	77551.	125705.	155604.	174170.
IM	E-6	22566.	94097.	152524.	188803.	211330.
IM	E-7	24907.	103859.	168347.	208390.	233253.
IM	E-8	28533.	118979.	192856.	238728.	267211.
IM	E-9	See PI	(p. B-20) for LCC data at pay grade E-9			
<u>INTELLIGENCE SPECIALIST</u>						
IS	E-2	14896.	62114.	100683.	124631.	139501.
IS	E-3	15319.	63878.	103542.	128170.	143462.
IS	E-4	16187.	67498.	109409.	135432.	151591.
IS	E-5	18604.	77576.	125745.	155654.	174226.
IS	E-6	23420.	97658.	158297.	195949.	219327.
IS	E-7	25200.	105081.	170328.	210841.	235997.
IS	E-8	28672.	119558.	193795.	239891.	268512.
IS	E-9	30664.	127865.	207259.	256557.	287167.

<sup>a</sup>Cost figures for 5, 10, 15 and 20 years reflect a 10 percent discount rate. If discounted costs are not desired, use the "1" year cost multiplied by the number of years.

<sup>d</sup>IC and EM ratings join at the EM E-9 pay grade.

Table B-1 (Continued)

Rating	Pay Grade	Years <sup>a</sup>				
		1	5	10	15	20
<u>JOURNALIST</u>						
JO	E-2	14295.	59608.	96620.	119602.	133872.
JO	E-3	15198.	63374.	102724.	127157.	142329.
JO	E-4	16164.	67402.	109253.	135240.	151375.
JO	E-5	17698.	73798.	119621.	148074.	165741.
JO	E-6	21277.	88722.	143812.	178019.	199258.
JO	E-7	24648.	102779.	166597.	206223.	230828.
JO	E-8	28235.	117736.	190841.	236234.	264420.
JO	E-9	30371.	126643.	205279.	254106.	284423.
<u>LITHOGRAPHER</u>						
LI	E-2	12634.	52682.	85394.	105705.	118317.
LI	E-3	13684.	57060.	92491.	114490.	128150.
LI	E-4	14962.	62390.	101129.	125183.	140119.
LI	E-5	17857.	74461.	120696.	149045.	167230.
LI	E-6	22252.	92788.	150402.	186176.	208389.
LI	E-7	25078.	104572.	169503.	209321.	234855.
LI	E-8	27709.	115543.	187286.	231833.	259494.
LI	E-9	31438.	131092.	212491.	263033.	294416.
<u>LEGALMAN</u>						
LN	E-2	Entry to LN is from YN E-4 only see YN (p. B-19)				
LN	E-3	for LCC data at pay grades E-2 through E-4				
LN	E-4					
LN	E-5	18639.	77722.	125982.	155947.	174554.
LN	E-6	22284.	92921.	150618.	186444.	208689.
LN	E-7	24793.	103384.	167577.	207436.	232186.
LN	E-8	27562.	114930.	186293.	230604.	258117.
LN	E-9	30554.	127406.	206516.	255637.	286137.
<u>MASTER-AT-ARMS</u>						
MA	E-2	Entry to MA is from any rating at pay grade				
MA	E-3	E-6 only. See BM (p. B-5) for equivalent LCC				
MA	E-4	data for pay grades E-2 through E-5				
MA	E-5					
MA	E-6	23016.	95974.	155566.	192568.	215544.
MA	E-7	24494.	102137.	165556.	204934.	229385.
MA	E-8	28363.	118270.	191707.	237305.	265618.
MA	E-9	31497.	131338.	212889.	263527.	294968.
<u>MOLDER</u>						
ML	E-2	13363.	55722.	90321.	111804.	125144.
ML	E-3	14603.	60893.	98702.	122179.	136757.
ML	E-4	15336.	63949.	103657.	128312.	143621.
ML	E-5	18149.	75679.	122670.	151848.	169965.
ML	E-6	21967.	91600.	148476.	183792.	205720.
ML	E-7	25299.	105494.	170997.	211670.	236924.
ML	E-8	28010.	116798.	189321.	234352.	262313.
ML	E-9	30607.	127627.	206874.	256080.	286633.

<sup>a</sup>Cost figures for 5, 10, 15 and 20 years reflect a 10 percent discount rate. If discounted costs are not desired, use the "1" year cost multiplied by the number of years.

Table B-1 (Continued)

Rating	Pay Grade	Years <sup>a</sup>				
		1	5	10	15	20
<b>MACHINIST'S MATE</b>						
MM	E-2	16471.	68682.	111328.	137808.	154250.
MM	E-3	18283.	76238.	123576.	152969.	171220.
MM	E-4	19035.	79373.	128658.	159261.	178262.
MM	E-5	19592.	81696.	132423.	163921.	183478.
MM	E-6	22723.	94752.	153586.	190117.	212800.
MM	E-7	25827.	107695.	174566.	216087.	241869.
MM	E-8	30043.	125275.	203062.	251361.	281352.
MM	E-9	30816.	128499.	208287.	257829.	288591.
<b>MINEMAN</b>						
MN	E-2	13603.	56723.	91943.	113812.	127392.
MN	E-3	14506.	60488.	98047.	121363.	135848.
MN	E-4	16108.	67168.	108875.	134771.	150851.
MN	E-5	18530.	77268.	125245.	155035.	173533.
MN	E-6	22763.	94919.	153856.	190452.	213175.
MN	E-7	24441.	101916.	165198.	204491.	228889.
MN	E-8	29632.	123562.	200284.	247923.	277503.
MN	E-9	33959.	141605.	229530.	284125.	318025.
<b>MACHINERY REPAIRMAN</b>						
MR	E-2	12436.	51856.	84055.	104049.	116463.
MR	E-3	13339.	55622.	90159.	111604.	124919.
MR	E-4	14973.	62435.	101203.	125275.	140222.
MR	E-5	17619.	73469.	119088.	147413.	165001.
MR	E-6	22368.	93272.	151186.	187147.	209476.
MR	E-7	25572.	106632.	172842.	213954.	239481.
MR	E-8	28248.	117790.	190929.	236343.	264542.
MR	E-9	30643.	127777.	207117.	256381.	286971.
<b>MESS MANAGEMENT SPECIALIST</b>						
MS	E-2	13453.	56097.	90929.	112557.	125987.
MS	E-3	14586.	60822.	98587.	122037.	136597.
MS	E-4	15507.	64662.	104812.	129743.	145223.
MS	E-5	20688.	86266.	139831.	173091.	193742.
MS	E-6	24104.	100511.	162920.	201671.	225733.
MS	E-7	26440.	110251.	178709.	221216.	247610.
MS	E-8	29395.	122573.	198682.	245940.	275283.
MS	E-9	31588.	131718.	213505.	264288.	295820.
<b>MISSILE TECHNICIAN<sup>e</sup></b>						
MT	E-2	19073.	79532.	128915.	159578.	178618.
MT	E-3	22018.	91812.	148821.	184218.	206198.
MT	E-4	22217.	92642.	150166.	185883.	208061.
MT	E-5	24806.	103438.	167665.	207545.	232307.
MT	E-6	28710.	119717.	194052.	240209.	268868.
MT	E-7	30566.	127456.	206597.	255737.	286250.
MT	E-8	See FT (p. B-9) for LCC data at pay grades E-8				
MT	E-9	and E-9				

<sup>a</sup>Cost figures for 5, 10, 15 and 20 years reflect a 10 percent discount rate. If discounted costs are not desired, use the "1" year cost multiplied by the number of years.

<sup>e</sup>MT and FT ratings join at the FT E-8 and E-9 pay grades.

Table B-1 (Continued)

Rating	Pay Grade	Years <sup>a</sup>				
		1	5	10	15	20
<u>MUSICIAN</u>						
MU	E-2	15952.	66518.	107820.	133466.	149390.
MU	E-3	18000.	75058.	121663.	150601.	168569.
MU	E-4	17912.	74691.	121068.	149865.	167745.
MU	E-5	19579.	81642.	132335.	163812.	183357.
MU	E-6	23432.	97708.	158378.	196049.	219440.
MU	E-7	25703.	107178.	173728.	215050.	240708.
MU	E-8	28272.	117891.	191092.	236544.	264766.
MU	E-9	31683.	132114.	214147.	265083.	296710.
<u>NAVY COUNSELOR</u>						
NC	E-2	Entry to NC is from any rating at pay grade				
NC	E-3	E-6 only. See PN (p. B-16) for equivalent				
NC	E-4	LCC data for pay grades E-2 through E-5				
NC	E-5					
NC	E-6	23499.	97988.	158831.	196610.	220067.
NC	E-7	25632.	106882.	173248.	214456.	240043.
NC	E-8	28693.	119646.	193937.	240066.	268709.
NC	E-9	31796.	132585.	214910.	266028.	297768.
<u>OPTICALMAN</u>						
OM	E-2	14283.	59558.	96539.	119502.	133760.
OM	E-3	15186.	63324.	102643.	127057.	142216.
OM	E-4	17219.	71801.	116384.	144067.	161255.
OM	E-5	19061.	79482.	128834.	159478.	178506.
OM	E-6	22672.	94539.	153241.	189690.	212322.
OM	E-7	25153.	104835.	170010.	210448.	235557.
OM	E-8	28242.	117765.	190889.	236293.	264485.
OM	E-9	See PI (p. B-20) for LCC data at pay grade E-9				
<u>OPERATIONS SPECIALIST</u>						
OS	E-2	13360.	55709.	90301.	111779.	125116.
OS	E-3	14725.	61401.	99527.	123200.	137899.
OS	E-4	15544.	64816.	105063.	130052.	145569.
OS	E-5	17241.	71893.	116533.	144251.	161461.
OS	E-6	22233.	92709.	150274.	186017.	208211.
OS	E-7	25194.	105056.	170287.	210791.	235941.
OS	E-8	28711.	119721.	194059.	240217.	268877.
OS	E-9	31913.	133073.	215701.	267007.	298864.
<u>OCEAN SYSTEMS TECHNICIAN</u>						
OT	E-2	13087.	54571.	88456.	109495.	122559.
OT	E-3	13913.	58015.	94039.	116406.	130295.
OT	E-4	15537.	64787.	105015.	129994.	145503.
OT	E-5	17493.	72944.	118236.	146359.	163821.
OT	E-6	22155.	92383.	149747.	185365.	207481.
OT	E-7	24351.	101540.	164589.	203738.	228046.
OT	E-8	28073.	117061.	189747.	234879.	262903.
OT	E-9	31390.	130892.	212166.	262631.	293966.

<sup>a</sup>Cost figures for 5, 10, 15 and 20 years reflect a 10 percent discount rate. If discounted costs are not desired, use the "1" year cost multiplied by the number of years.

Table B-1 (Continued)

Rating	Pay Grade	Years <sup>a</sup>				
		1	5	10	15	20
<u>POSTAL CLERK</u>						
PC	E-2	14265.	59483.	96418.	119351.	133591.
PC	E-3	15473.	64520.	104583.	129458.	144904.
PC	E-4	15693.	65438.	106070.	131299.	146964.
PC	E-5	18677.	77881.	126239.	156265.	174909.
PC	E-6	23123.	96420.	156289.	193464.	216546.
PC	E-7	25197.	105068.	170308.	210816.	235969.
PC	E-8	28719.	119754.	194113.	240284.	268952.
PC	E-9	33419.	139353.	225880.	279607.	312968.
<u>PHOTOGRAPHER'S MATE</u>						
PH	E-2	13688.	57077.	92518.	114524.	128188.
PH	E-3	15064.	62815.	101818.	126036.	141074.
PH	E-4	15978.	66626.	107996.	133683.	149633.
PH	E-5	18090.	75433.	122271.	151354.	169412.
PH	E-6	23083.	96253.	156019.	193129.	216171.
PH	E-7	25999.	108412.	175728.	217526.	243480.
PH	E-8	29339.	122340.	198303.	245471.	274759.
PH	E-9	31655.	131997.	213957.	264848.	296448.
<u>PATTERNMAKER</u>						
PM	E-2	15795.	65863.	106759.	132152.	147920.
PM	E-3	17576.	73290.	118797.	147053.	164599.
PM	E-4	18276.	76209.	123528.	152910.	171154.
PM	E-5	18253.	76113.	123373.	152718.	170939.
PM	E-6	23300.	97158.	157486.	194945.	218204.
PM	E-7	25555.	106561.	172727.	213812.	239322.
PM	E-8	See ML (p. B-13) for LCC data at				
PM	E-9	pay grades E-8 and E-9				
<u>PERSONNELMAN</u>						
PN	E-2	13431.	56006.	90781.	112373.	125781.
PN	E-3	14578.	60788.	98533.	121970.	136522.
PN	E-4	15619.	65129.	105569.	130680.	146271.
PN	E-5	17798.	74215.	120297.	148911.	166678.
PN	E-6	22394.	93380.	151362.	187364.	209719.
PN	E-7	25122.	104755.	169801.	210189.	235267.
PN	E-8	28563.	119104.	193058.	238979.	267491.
PN	E-9	31610.	131810.	213653.	264472.	296027.
<u>AIRCREW SURVIVAL EQUIPMENTMAN</u>						
PR	E-2	13693.	57098.	92552.	114565.	128234.
PR	E-3	14596.	60863.	98655.	122121.	136691.
PR	E-4	15999.	66714.	108138.	133859.	149830.
PR	E-5	18798.	78385.	127056.	157278.	176043.
PR	E-6	23126.	96432.	156310.	193489.	216574.
PR	E-7	25538.	106490.	172612.	213669.	239162.
PR	E-8	28039.	116919.	189517.	234594.	262584.
PR	E-9	31583.	131697.	213471.	264246.	295774.

<sup>a</sup>Cost figures for 5, 10, 15 and 20 years reflect a 10 percent discount rate. If discounted costs are not desired, use the "1" year cost multiplied by the number of years.

Table B-1 (Continued)

Rating	Pay Grade	Years <sup>a</sup>				
		1	5	10	15	20
<u>QUARTERMASTER</u>						
QM	E-2	13722.	57219.	92748.	114808.	128506.
QM	E-3	14977.	62452.	101230.	125308.	140259.
QM	E-4	15739.	65630.	106381.	131684.	147395.
QM	E-5	17599.	73386.	118952.	147246.	164814.
QM	E-6	21262.	88660.	143711.	177893.	199118.
QM	E-7	24885.	103767.	168199.	208206.	233047.
QM	E-8	28248.	117790.	190929.	236343.	264542.
QM	E-9	31627.	131880.	213768.	264614.	296186.
<u>RADIOMAN</u>						
RM	E-2	13627.	56823.	92105.	114013.	127616.
RM	E-3	15066.	62823.	101832.	126053.	141093.
RM	E-4	16000.	66718.	108145.	133868.	149839.
RM	E-5	18224.	75992.	123177.	152475.	170667.
RM	E-6	23078.	96232.	155985.	193087.	216125.
RM	E-7	25891.	107962.	174998.	216623.	242468.
RM	E-8	28416.	118491.	192065.	237749.	266115.
RM	E-9	32206.	134295.	217682.	269459.	301608.
<u>RELIGIOUS PROGRAM SPECIALIST</u>						
RP	E-2	15383.	64145.	103974.	128705.	144061.
RP	E-3	15359.	64045.	103812.	128504.	143836.
RP	E-4	15834.	66026.	107023.	132479.	148285.
RP	E-5	17472.	72856.	118094.	146183.	163625.
RP	E-6	21327.	88931.	144150.	178437.	199727.
RP	E-7	24103.	100506.	162913.	201663.	225724.
RP	E-8	27077.	112908.	183015.	226546.	253575.
RP	E-9	31525.	131455.	213079.	263761.	295231.
<u>SHIP'S SERVICEMAN</u>						
SH	E-2	14878.	62039.	100561.	124480.	139332.
SH	E-3	15921.	66388.	107611.	133207.	149100.
SH	E-4	16178.	67460.	109348.	135357.	151506.
SH	E-5	18886.	78752.	127651.	158014.	176867.
SH	E-6	22959.	95736.	155181.	192092.	215010.
SH	E-7	24990.	104205.	168908.	209084.	234030.
SH	E-8	28622.	119350.	193457.	239472.	268044.
SH	E-9	31732.	132318.	214478.	265493.	297169.
<u>STOREKEEPER</u>						
SK	E-2	14615.	60943.	98783.	122280.	136869.
SK	E-3	15815.	65946.	106894.	132320.	148107.
SK	E-4	16237.	67706.	109747.	135850.	152059.
SK	E-5	18664.	77826.	126151.	156156.	174788.
SK	E-6	22891.	95452.	154721.	191523.	214373.
SK	E-7	25140.	104831.	169922.	210339.	235435.
SK	E-8	28096.	117157.	189902.	235071.	263118.
SK	E-9	31715.	132247.	214363.	265351.	297010.

<sup>a</sup>Cost figures for 5, 10, 15 and 20 years reflect a 10 percent discount rate. If discounted costs are not desired, use the "1" year cost multiplied by the number of years.

Table B-1 (Continued)

Rating	Pay Grade	Years <sup>a</sup>				
		1	5	10	15	20
<u>SIGNALMAN</u>						
SM	E-2	13554.	56518.	91612.	113403.	126933.
SM	E-3	14714.	61355.	99453.	123108.	137796.
SM	E-4	15312.	63849.	103494.	128111.	143396.
SM	E-5	17562.	73231.	118702.	146936.	164468.
SM	E-6	24011.	100123.	162291.	200893.	224862.
SM	E-7	26334.	109809.	177993.	220329.	246617.
SM	E-8	27967.	116619.	189030.	233992.	261910.
SM	E-9	31569.	131639.	213376.	264129.	295643.
<u>SONAR TECHNICIAN</u>						
ST	E-2	See STG or STS below as appropriate for LCC data at pay grades E-2 through E-8.				
ST	E-3					
ST	E-4					
ST	E-5					
ST	E-6					
ST	E-7					
ST	E-8					
ST	E-9	30723.	128111.	207658.	257051.	287720.
<u>SONAR TECHNICIAN (Surface)</u>						
STG	E-2	13748.	57327.	92923.	115026.	128750.
STG	E-3	15666.	65325.	105887.	131073.	146712.
STG	E-4	16366.	68244.	110618.	136930.	153267.
STG	E-5	19935.	83126.	134741.	166791.	186691.
STG	E-6	23813.	99297.	160953.	199237.	223008.
STG	E-7	26463.	110347.	178864.	221408.	247825.
STG	E-8	30785.	128369.	208077.	257569.	288300.
STG	E-9	See ST above for LCC data at E-9				
<u>SONAR TECHNICIAN (Submarine)</u>						
STS	E-2	16331.	68098.	110382.	136637.	152939.
STS	E-3	17234.	71864.	116485.	144192.	161396.
STS	E-4	19899.	82976.	134498.	166489.	186353.
STS	E-5	23266.	97016.	157256.	194660.	217885.
STS	E-6	24864.	103680.	168057.	208030.	232850.
STS	E-7	27749.	115710.	187557.	232168.	259868.
STS	E-8	31400.	130934.	212234.	262715.	294060.
STS	E-9	See ST above for LCC data at E-9				
<u>STEELWORKER</u>						
SW	E-2	12868.	53658.	86975.	107663.	120508.
SW	E-3	13204.	55059.	89246.	110474.	123655.
SW	E-4	14770.	61589.	99831.	123576.	138321.
SW	E-5	17995.	75037.	121629.	150559.	168523.
SW	E-6	22991.	95869.	155397.	192359.	215310.
SW	E-7	24922.	103921.	168449.	208515.	233394.
SW	E-8	29450.	122803.	199054.	246400.	275798.
SW	E-9	See CU (p. B-20) for LCC data at pay grade E-9				

<sup>a</sup>Cost figures for 5, 10, 15 and 20 years reflect a 10 percent discount rate. If discounted costs are not desired, use the "1" year cost multiplied by the number of years.

Table B-1 (Continued)

Rating	Pay Grade	Years <sup>a</sup>				
		1	5	10	15	20
<u>TRADESMAN</u>						
TD	E-2	14664.	61147.	99115.	122690.	137328.
TD	E-3	15567.	64912.	105218.	130245.	145784.
TD	E-4	16812.	70104.	113633.	140661.	157444.
TD	E-5	17993.	75028.	121615.	150542.	168504.
TD	E-6	22167.	92433.	149828.	185465.	207593.
TD	E-7	24977.	104151.	168821.	208976.	233909.
TD	E-8	27893.	116310.	188530.	233373.	261217.
TD	E-9	31554.	131576.	213275.	264003.	295502.
<u>TORPEDOMAN'S MATE</u>						
TM	E-2	13712.	57177.	92680.	114724.	128412.
TM	E-3	14618.	60955.	98804.	122305.	136897.
TM	E-4	16617.	69291.	112315.	139030.	155618.
TM	E-5	18606.	77585.	125759.	155671.	174245.
TM	E-6	24155.	100723.	163265.	202098.	226211.
TM	E-7	26852.	111969.	181494.	224663.	251468.
TM	E-8	29340.	122344.	198310.	245480.	274768.
TM	E-9	33021.	137693.	223190.	276277.	309240.
<u>UTILITIESMAN</u>						
UT	E-2	12848.	53574.	86840.	107496.	120321.
UT	E-3	13197.	55030.	89199.	110416.	123589.
UT	E-4	14929.	62252.	100906.	124907.	139810.
UT	E-5	18617.	77630.	125833.	155763.	174348.
UT	E-6	23699.	98822.	160182.	198283.	221940.
UT	E-7	25924.	108100.	175221.	216899.	242777.
UT	E-8	28752.	119892.	194336.	240560.	269261.
UT	E-9	31552.	131568.	213261.	263987.	295483.
<u>YEOMAN</u>						
YN	E-2	14409.	60084.	97391.	120556.	134940.
YN	E-3	15869.	66172.	107259.	132771.	148613.
YN	E-4	16071.	67014.	108625.	134462.	150504.
YN	E-5	18399.	76721.	124360.	153939.	172306.
YN	E-6	22182.	92496.	149929.	185591.	207734.
YN	E-7	24995.	104226.	168942.	209126.	234077.
YN	E-8	28623.	119354.	193464.	239481.	268053.
YN	E-9	31518.	131426.	213031.	263702.	295165.

<sup>a</sup>Cost figures for 5, 10, 15 and 20 years reflect a 10 percent discount rate. If discounted costs are not desired, use the "1" year cost multiplied by the number of years.



Table B-2  
Compressed Ratings

Rating <sup>b</sup> Pay Grade	Years <sup>a</sup>				
	1	5	10	15	20
AIRCRAFT MAINTENANCEMAN (Master Chief/E-9 only,					
AF E-9	31571.	131647.	213339.	264145.	295660.
(includes AD and AM ratings)					
AVIONICS TECHNICIAN (Master Chief/E-9 only)					
AV E-9	31893.	132991.	215569.	266843.	298681.
(includes AT, AQ, AX and AE ratings)					
CONSTRUCTIONMAN (Master Chief/E-9 only)					
CU E-9	42289.	176339.	285832.	353819.	396034.
(includes BU, EA, and SW ratings)					
EQUIPMENTMAN (Master Chief/E-9 only)					
EQ E-9	31778.	132511.	214790.	265879.	297601.
(includes CM, and EO ratings)					
UTILITIESMAN (Master Chief/E-9 only)					
UT E-9	31552.	131568.	213261.	263987.	295483.
(includes CE, and UT ratings)					
PRECISION INSTRUMENTMAN (Master Chief/E-9 only)					
PI E-9	30741.	128186.	207780.	257201.	287833.
(includes IM and OM ratings)					

<sup>a</sup> Cost figures for 5, 10, 15 and 20 years reflect a 10 percent discount rate. If discounted costs are not desired, use the "1" year cost multiplied by the number of years.

<sup>b</sup> These six ratings are the result of compression at the E-9 level of many other ratings which are effective through the E-8 level.

LIFE CYCLE BILLET COSTS FOR  
ENLISTED APPRENTICESHIPS<sup>c</sup>

<sup>c</sup>Life Cycle Cost data for non-school trained, non-petty officer personnel (General Detail), in the several apprenticeships of Airman (AN), Constructionman (CN), Fireman (FN), and Seaman (SN), at pay grades E-2 and E-3 have been derived from ABE, SW, MM and BM ratings respectively. Pay grade E-1 (Recruit) data is not shown since these costs are included in the recruit training costs and thus are apportioned across all ratings.

<u>RATING</u>	<u>PAY GRADE</u>	<u>1</u>	<u>5</u>	<u>10</u>	<u>15</u>	<u>20</u>
<u>AIRMAN (AN)</u>						
AA	E-2	11407	45051	73025	90394	101179
AN	E-3	11298	47111	76364	94527	105805
<u>CONSTRUCTIONMAN (CN)</u>						
CA	E-2	12927	53904	87374	108157	121061
CN	E-3	15519	64712	104894	129843	145335
<u>FIREMAN (FN)</u>						
FA	E-2	13006	54233	87908	108818	121801
FN	E-3	13591	56673	91892	113712	127279
<u>SEAMAN (SN)</u>						
SA	E-2	11826	49313	79932	98945	110750
SN	E-3	12390	51665	83745	103664	116032

## DISTRIBUTION LIST

Assistant Secretary of Defense (Manpower, Reserve Affairs & Logistics)  
Deputy Under Secretary of Defense Research and Engineering (Research and Advanced Technology), Military Assistant for Training and Personnel Technology  
Assistant Secretary of the Navy (Manpower, Reserve Affairs, and Logistics)  
Assistant Secretary of the Navy, Deputy Assistant Secretary of the Navy (Manpower) (5)  
Chief of Naval Operations (OP-01), (PO-11), (OP-110), (OP-111C3), (OP-112), (OP-112C) (10), (OP-115), (OP-12) (2), (OP-120C), (OP-122D), (OP-13), (OP-13B1), (OP-132), (OP-135D), (OP-15), (OP-16) (OP-162), (OP-02), (OP-21), (OP-03), (OP-031D1), (OP-39), (OP-40), (OP-433), (OP-05), (OP-095), (OP-90), (OP-901), (OP-964D), (OP-964D1), (OP-966E4), (OP-987H)  
Chief of Naval Material (NMAT-00), (NMAT-04), (NMAT-08B), (NMAT 08L)  
Director, Strategic Systems Project (NSP-00), (NSP-14), (NSP-15), (NSP-1541), (NSP-201), (NSP-205), (NSP-22), (NSP-23), (NSP-24), (NSP-26), (NSP-27)  
Chief of Naval Research (Code 450) (3), (Code 452), (Code 455), (Code 458) (2)  
Chief of Information (OI-2252)  
Chief of Naval Education and Training (N-3), (N-31), (N-5)  
Chief of Naval Technical Training (017)  
Commandant of the Marine Corps (MPI-20)  
Commander in Chief, U.S. Atlantic Fleet  
Commander in Chief, U.S. Pacific Fleet  
Commander David W. Taylor Naval Ship Research and Development Center  
Commander, Naval Air Development Center (Code 00), (Code 2023), (Code 602)  
Commander, Naval Air Force U.S. Atlantic Fleet  
Commander, Naval Air Force U.S. Pacific Fleet  
Commander, Naval Air Systems Command (PMA-231), (NAIR-531)  
Commander, Naval Aviation Logistics Center (Code 422), (Code 423)  
Commander, Naval Electronic Systems Command (NELEX 01), (NELEX 330), (NELEX 350), (NELEX 04C), (NELEX 4701), (NELEX 501), (NELEX 504B), (NELEX 52011) (6), (NELEX 550), (PMS 107-5), (PMS-108-1), (PMS-124-43)  
Commander, Naval Facilities Engineering Command (031A)  
Commander, Naval Military Personnel Command (NMPC-5) (5)  
Commander, Naval Ocean Systems Center (Code 00), (Code 161), (Code 811), (Code 814), (Code 8143), (Code 821), (Code 823), (Code 8231), (Code 824), (Code 825), (Code 8254), (Code 8302), (Code 834), (Code 8341), (Code 912), (Code 921), (Code 9242), (Code 9311), (Code 9321), (Code 9333)  
Commander, Naval Sea Systems Command (NSEA 01721), (NSEA 03C), (NSEA 032J), (NSEA 312), (NSEA 3134) (10), (NSEA 04L2), (NSEA 05L), (NSEA 05L1C), (NSEA 06H3-13), (NSEA 61R2) (3), (NSEA 62R) (3), (NSEA 63R) (3), (PMS 300), (PMS 300C4), (PMS 30612), (PMS 377213), (PMS 404-30), (PMS 404-35)  
Commander, Naval Surface Force, U.S. Atlantic Fleet  
Commander, Naval Surface Force, U.S. Pacific Fleet  
Commander, Naval Supply Systems Command  
Commander, Naval Surface Weapons Center, Dahlgren (Code G31) (5)  
Commander, Naval Surface Weapons Center, White Oak  
Commander, Naval Weapons Center (Code 00), (Code 081), (Code 3664)  
Commander, Submarine Force, U.S. Atlantic Fleet  
Commander, Submarine Force, U.S. Pacific Fleet  
Commander Training Command, U.S. Atlantic Fleet  
Commander Training Command, U.S. Pacific Fleet (N3A)  
Commanding Officer, Fleet Combat Training Center, Pacific (Code 00E)  
Commanding Officer, Naval Aerospace Medical Institute (Library Code 12) (2)  
Commanding Officer, Naval Air Engineering Center (Code 92A44)

Commanding Officer, Naval Coastal Systems Center  
Commanding Officer, Naval Education and Training Program Development Center (Technical Library) (2)  
Commanding Officer, Naval Electronic Systems Security Engineering Center (Code 240)  
Commanding Officer, Naval Sea Support Center, Pacific (Code 40)  
Commanding Officer, Naval Ship Weapon Systems Engineering Station (Code 5400)  
Commanding Officer, Naval Training Equipment Center (Technical Library), (N82), (712)  
Commanding Officer, Naval Underwater Systems Center (Code 00), (Code 22), (Code 301)  
Director, Naval Weapons Engineering Support Activity (Code ESA 8313), (Code ESA 84)  
Director, Training Analysis and Evaluation Group (TAEG)  
Officer in Charge, Central Test Site for Personnel and Training Evaluation Program  
Officer in Charge, Annapolis Laboratory, David W. Taylor Naval Ship Research and Development Center Detachment (Code 00), (Code 273), (Code 2735) (2)  
Officer in Charge, Naval Facilities Engineering Command Detachment, Civil Engineering Laboratory (Code L03), (Code L0D3)  
Officer in Charge, New London Laboratory, Naval Underwater Systems Center Detachment  
Officer in Charge, White Oak Laboratory, Naval Surface Weapons Center Detachment  
President, Naval War College (Code E114)  
Master Chief Petty Officer of the Navy (OP-01D)  
Fleet Master Chief, Naval Material Command (NMAT 00C)  
Fleet Master Chief, U.S. Atlantic Fleet (Code 003)  
Fleet Master Chief, U.S. Pacific Fleet (Code 008)  
Force Master Chief, Chief of Naval Education and Training (Code 003)  
Commanding Officer, Army Research Institute for the Behavioral and Social Sciences, Alexandria (Reference Service)  
Commander, Air Force Human Resources Laboratory (Manpower and Personnel Division) Brooks Air Force Base  
Commander, Air Force Human Resources Laboratory (Scientific and Technical Information Office) Brooks Air Force Base  
Commander, Air Force Human Resources Laboratory (AFHRL/LR) Wright-Patterson Air Force Base  
Program Manager, Life Sciences Directorate, Bolling Air Force Base  
Commandant Coast Guard Headquarters (G-P-1/62)  
Director, Science and Technology, Library of Congress  
Defense Technical Information Center (DDA) (12)